Indicator use for sustainable transport - Developments and limitations in Europe

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Publication date:
2014

Document Version
Peer reviewed version

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To be presented at

IARU Sustainability Science Congress, Session: 'From knowledge to action'

Copenhagen, October 22-24, 2014

Background and key assumptions

Transport systems generate a wide range of sustainability impacts, including a growing share of GHG emissions. Policy goals to reduce negative transport impacts and emissions have therefore been adopted by many policy bodies at local, national and international levels (e.g. .City of Copenhagen 2012; Highways Agency 2012; European Commission 2011). Knowledge about the magnitude of the impacts, and how they change as a result various transport investments and policy interventions are needed to effectively reduce them and to enable a transition towards a sustainable low carbon transport system. However, according to several key indicators, there seems to be limited progress towards sustainability in the transport field and there are many examples of transport policy decisions that do not appear to be much informed or influenced by sustainability and climate related indicators. This could be indicative of 'knowledge –action gaps' in the area of transport policy.

This presentation will take e closer look closer at European transport policy making and the use of associated indicators of sustainable transport in that context.

Sustainability has long been acknowledged as an overarching ambition for European transport policy, and increasingly ambitious goals to limit and reduce GHG emissions from transport have been set. The term 'Sustainable Mobility' was adopted already in 1993 in the title of the first Common Transport Policy (CTP) White Paper, where it was noted that "transport systems must contribute to the solution of major environmental threats such as the ' greenhouse effect' and to the achievement of sustainable development" (European Commission 1993). In 2006 'Sustainable Transport' was incorporated as one of seven key challenges in the European Unions' Renewed Strategy for Sustainable Development with goals to reduce GHG emissions, "decouple" economic growth from the demand for transport, and ensure a "balanced shift" towards environmentally friendly transport modes (Council 2006). In 2009 legislation was adopted that for the first time obliged member states to set a limit for emissions from non-ETS sectors such

as transport by 2020, and in 2011 the European Commission proposed the bold target to reduce European transport sector GHG emissions by 60% between 1990 and 2050, as part of an overall roadmap (EC 2011). Hence, 'sustainability' and 'climate change' must be seen as widely accepted elements in European transport policy goals.

However, according to available official indicators the sustainability improvements of European transport systems remain limited, slow, and potentially reversible (EUROSTAT 2013; EEA 2013). European transport is still fuelled by oil for 93% of its energy consumption (EUROSTAT 2014), non-conventionally fuelled cars constitute less than 0,5% of annual new vehicle registrations, and the transport sector is now responsible for a quarter of all the energy related GHG emissions in Europe. In many cities air quality limit values are exceeded, and in some capitals more than 25% of the population is exposed to noise levels above a WHO target for night-time noise (EEA 2013). Also, transport infrastructure is a major consumer of land resources and contributes to the fragmentation of European landscapes and habitats (Spindler et al 2014). Neither "decoupling" nor "modal shift" have occurred to any substantial degree, and even though transport GHG emissions have actually declined in recent years due to economic contraction, the transport sector is generally not well on track towards meeting long term sustainability goals (EUROSTAT 2013).

Hence three are clear indications of a gap between the transport policy goals that have been formulated and the outcomes of transport policies that have been implemented so far, as measured with indicators of transport patterns in Europe. Moreover it can be concluded that the limited progress is not due to lack of knowledge per se, as the gap is evident from official indicators and reports.

While reasons for this gap can likely be found within a broad range of economic, technological and behavioural factors, policy failures can also be assumed to play a role for limited progress towards sustainable low-carbon transport (Schwanen et al. 2011). UNEP (2009) summarizes a number of general factors that tend to impede integrated decision -making for sustainability throughout the policy cycle, such as conflicting policy agendas and goals, inadequate problem analysis, ineffective policy measures, insufficient implementation of interventions, and intractability of sustainability effects in policy evaluation. Several failures of these and others have been detected in critical analysis of transport policies (Nilsson 2013, Schöller-Schwedes 2010; Docherty & Shaw, J. 2008; Tengström 1999)

We assume here that the postulated 'sustainable transport policy failure' is at least partly associated with gaps between knowledge provision and policy making, or as formulated by Banister and Hickman (2013), as an 'implementation gap', in terms of the ways in which scientific knowledge is translated into policies. We will zoom closer on the role of policy indicators and associated knowledge resources in ensuring or accelerating change. Indicators are important here exactly because they are conceived as tools

that can help bridge gaps between knowledge production and policy implementation by conveying condensed and focused information of high relevance for policy priorities and processes. Nevertheless, according to background problem statement above, such a mechanism does not seem to work so well for European transport policy. The question is why this is so .

Research question:

To what extent and in what ways are indicators for sustainable transport used in association with European transport policy processes and decision making and which factors can explain the use and role of the indicators and associated knowledge resources. Moreover, what could the results imply for research on moving from knowledge to action on sustainability more generally?

Methods:

The main method is a review of recent empirical studies in the field of knowledge use for sustainable transport in Europe, conducted by the main author and colleagues (Gudmundsson 2003; Gudmundsson et al 2011; Gudmundsson & Sørensen 2013), supported by wider literature within sustainability assessment, knowledge utilization, and transport policy studies.

Based on the this literature, the following dimensions of European sustainable transport policy could be expected to frame the role and influence of indicator application, namely the objective of the policy (sustainability/climate), the sector (transport), the governance level (EU) , and specific ways to use the tool itself (indicators), as follows

1) Sustainability is a complex and contested area of policy knowledge. The sustainability notion embodies tensions in the normative, analytic and strategic dimensions, thus inviting different and potentially conflicting aims, observations and action recommendations (Voss et al 2007; Becker et al 1997). Climate change seems somewhat less contested in the normative and analytical dimensions, but at the strategic level there are significant disagreement how deep cuts are warranted and feasible in the transport sector, and if a sector specific goal is even sensible

2) Transport policy has evolved from a relatively straightforward technical area focused on predicting demand, providing capacity, and promoting safety for users of motorized travel, to become a multi-dimensional, 'messy' even 'wicked' policy field, rich in environmental, distributional and jurisdictional controversies (Nooteboom 2008; Giorgi and Schmidt; Dudley & Richardson 2000). To

design and implement policies that are intervening in both economic, behavioural and technological relations to fulfill a broad range of often more conflicting policy aims has become a more complicated task that also invites new types of policy failures.

3) The European level of governance has developed substantially over the last decades, and has assumed a gradually more 'supranational' character. It is highly complex as it involves several decision making context and procedures. It can be stipulated that this situation also tend to increases tensions and resistance at the member state and citizen levels, which could help explain part of the policy failure. For example key parts of policies to internalized external costs have been abandoned (Brömmeltroet & Nowak 2008).

4) Complex knowledge and evidence can be operationalized for policy makers with the use of tools like models, assessment frameworks and indicators. However studies in knowledge utilization reveal that knowledge use is more often conditioned, limited and sometimes even distorted by a range of political, institutional, individual and cultural factors (Bjørnholt & Larsen 2014; Weiss 1990). Indicators as knowledge tool can therefore be expected to serve in at least the following four roles (Gudmundsson & Sørensen 2013), for different stakeholders:
    - An instrumental role of indicators means that indicators are used directly as a tool to form a decision; their content has direct influence. This is the most typical understanding of the role of indicators.
    - A conceptual role means that indicators contribute to shape knowledge or introduce new ideas, but are not immediately used or influential in decisions.
    - A process role means that indicator use over time affects the way some aspect of policy making is conducted, regardless of what the indicators tell directly.
    - A symbolic role means that indicators are used in the justification of decisions that have already been taken, or to give a rational appearance to them.

Results (preliminary)

The following is a brief exemplification from two of the previous studies. For the presentation more general and cross cutting findings with reference to the four factors will be attempted.

The first study (Gudmundsson 2004) looked the so-called Transport and Environment Reporting Mechanism (TERM) developed by the policy independent European Environment Agency (EEA). In this mechanism a set of around 40 indicators are used to represent primarily environmental sustainability impacts, but also societal driving factors behind them like transport demand and modal split. Effective reporting is partly hampered by limited data availability and a weak institutional connection to European policy making structures The analysis suggest that only limited instrumental policy use took place while more symbolic use is detected. This could partly also be ascribed to the short history of the TERM system at the time of analysis, while it has become more embedded in and focused on policy making in later years. This has however also led to a contraction of the indicator scope to cover a much narrower range of sustainability aspects than originally attempted.

The other study looked at the use and influence of a set of indicators applied in an ex ante study for the so-called Mid-Term Review (European Commission 2006) of the European Commission's former Transport Policy White Paper ' (issued in 2001). It was found that several indicators in both cases are actually used in policy processes, with evidence of use found in documents as well as interviews. However, 'use' did does not automatically mean 'influence' on policies. The Indicators seemed to play only a limited instrumental role, while some signs of symbolic, conceptual and process roles were found. Hence the indicators were used to support and 'rationalize' a major, but already anticipated change of policy objective, effectively abandoning previous goals for "decoupling" and "modal shift". The influence was partly obtained via collaboration between indicator producers and users in a relatively closed assessment process where a trustful relation could be nurtured. It was interesting to observe that the indicator based study connected to forecasting models allowed to uncover embodied policy failure in the previously existing transport policy objectives, that were based on a simplified assumptions. However, a shift in the political environment strongly contributed to this change with a shift political leadership in the Commission. Also the complexity of the institutional system means that even if indicators may have supported a reformulation of a Commission policy document, this does not mean that policy adoption or agreement at member state level were influenced or changed .

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